United States Environmental Protection Agency
Office of Water Washington DC 20460
EPA 570/9-91-012FS August 1991

EPA

FACT SHEET: NATIONAL PRIMARY DRINKING WATER STANDARDS

Contaminants	Health Effects	MCL[1]	Sources
Organic Chemicals			
Acrylamide [2]	probable cancer, nervous system	TT [3]	flocculents in sewage/wastewater treatment
Alachlor [2]	probable cancer	0.002	herbicide on corn and soybeans; under review for cancellation
Aldicarb [4]	nervous system	0.003	insecticide on cotton, potatoes; restricted in many areas due to groundwater contamination
Aldicarb sulfone [4]	nervous system	0.002	degraded from aldicarb by plants
Aldicarb sulfoxide [4]	nervous system	0.004	degraded from aldicarb by plants
Atrazine [2]	reproductive and cardiac	0.003	widely used herbicide on corn and on non-crop land
Benzene	cancer	0.005	fuel (leaking tanks); solvent commonly used in manufacture of industrial chemicals, pharmaceuticals, pesticides, paints and plastics

[1] In milligrams per liter, unless otherwise noted.
[2] Effective date - July 30,1992.
[3] TT=Treatment technique requirement in effect.
[4] Effective date - January 1, 1993.

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Contaminants	Health Effects	MCL[1]	Sources
Carbofuran [2]	nervous system and reproductive system	0.04	soil fumigant/insecticide on corn/cotton; restricted in some areas
Carbon Tetrachloride	possible cancer	0.005	commonly used in cleaning agents, industrial wastes from manufacture of coolants
Chlordane	probable cancer	0.002	soil insecticide for termite control, corn; potatoes; most uses cancelled in 1980
2,4-D [2] (Current MCL = 0.1)	liver, kidney, nervous system	0.07	herbicide for wheat, corn, rangelands
Dibromochloropropane (DBCP) [2]	probable cancer	0.0002	soil fumigant on soybeans, cotton; cancelled in 1977
Dichlorobenzene p-	possible cancer	0.075	used in insecticides, moth balls, air deodorizers
Dichlorobenzene o- [2]	nervous system, lung, liver, kidney	0.6	industrial solvent; chemical manufacturing
Dichloroethane (1,2-)	possible cancer	0.005	used in manufacture of insecticides, gasoline
Dichloroethylene (1,1-) [2]	liver/kidney effects	0.007	used in manufacture of plastics, dyes, perfumes, paints, SOCs (Synthetic Organic Chemicals)
Dichloroethylene (cis-1,2-) [2]	nervous system, liver, circulatory	0.07	industrial extraction solvent

[1] In milligrams per liter, unless otherwise noted.
[2] Effective date - July 30, 1992.

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Contaminants	Health Effects	MCL[1]	Sources
Dichloroethylene (trans-1,2)[2]	nervous system, liver, circulatory	0.1	industrial extraction solvent
Dichloropropane (1,2-)[2]	probable cancer, liver, lungs, kidney	0.005	soil fumigant; industrial solvent
Endrin[3]	nervous system/kidney effects	0.0002	insecticide used on cotton, small grains, orchards (cancelled)
Epichlorohydrin[2]	probable cancer, liver, kidney, lungs	TT[4]	epoxy resins and coatings, flocculents used in treatment
Ethylbenzene[2]	kidney, liver, nervous system	0.7	present in gasoline and insecticides; chemical manufacturing
Ethylene dibromide (EDB)[2]	probable cancer	0.00005	gasoline additive; soil fumigant, solvent cancelled in 1984; limited uses continue
Heptachlor[2]	probable cancer	0.0004	insecticide on corn; cancelled in 1983 for all but termite control
Heptachlor epoxide[2]	probable cancer	0.0002	soil and water organisms convert heptachlor to the epoxide
Lindane[2] (Current MCL = 0.004)	nervous system, liver, kidney	0.0002	insecticide for seed/lumber/livestock pest control; most uses restricted in 1983
Methoxychlor[2] (Current MCL = 0.1)	nervous system, liver, kidney	0.04	insecticide on alfalfa, livestock

[1] In milligrams per liter, unless otherwise noted.

[2] Effective date - July 30, 1992.

[3] Phase V proposes changing MCL for Endrin to 0.002.

[4] TT=Treatment technique requirement in effect.

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Contaminants	Health Effects	MCL[1]	Sources
Monochlorobenzene[2]	kidney, liver, nervous system	0.1	pesticide manufacturing; metal cleaner, industrial solvent
Pentachlorophenol[2]	probable cancer, liver, kidney	0.001	wood preservative and herbicide; non-wood uses banned in 1987
Polychlorinated byphenyls (PCBs)[2]	probable cancer	0.0005	electrical transformers, plasticizers; banned in 1979
Styrene[2]	liver, nervous system	0.1	plastic manufacturing; resins used in water treatment equipment
Tetrachloroethylene	probable cancer	0.005	dry cleaning/industrial solvent
Toluene[2]	kidney, nervous system, lung	1	chemical manufacturing; gasoline additive; industrial solvent
Total Trihalomethanes (TTHM) (chloroform, bromoform, bromodichloromethane, dibromochloromethane)	cancer risk	0.1	primarily formed when surface water containing organic matter is treated with chlorine
Toxaphene[2] (Current MCL = 0.005)	probable cancer	0.003	insecticide/herbicide for cotton, soybeans; cancelled in 1982
2-4-5-TP (Silvex)[2] (Current MCL = 0.01)	nervous system, liver, kidney	0.05	herbicide on rangelands, sugar cane, golf courses; cancelled in 1983.
Trichloroethane (1,1,1)	nervous system problems	0.2	used in manufacture of food wrappings, synthetic fibers

[1] In milligrams per liter, unless otherwise noted.
[2] Effective date - July 30, 1992.

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Contaminants	Health Effects	MCL[1]	Sources
Trichloroethylene (TCE)	possible cancer	0.005	waste from disposal of dry cleaning materials and manufacturing of pesticides, paints, waxes and varnishes, paint stripper, metal degreaser
Vinyl chloride	cancer risk	0.002	polyvinyl chloride pipes and solvents used to join them; industrial waste from manufacture of plastics and synthetic rubber
Xylenes[2]	liver, kidney, nervous system	10	paint/ink solvent; gasoline refining by-product; component of detergents
Inorganic chemicals			
Arsenic[3]	dermal and nervous system toxicity effects	0.05	geological, pesticide residues, industrial waste and smelter operations
Asbestos[2]	benign tumors	7 MFL[4]	natural mineral deposits; also in Asbestos/Cement pipe
Barium[5] (Current MCL = 1.0 mg/l)	circulatory system	2	natural mineral deposits; oil/gas drilling operations; paint and other industrial uses
Cadmium[2]	kidney	0.005	natural mineral deposits; metal finishing; corrosion product plumbing

[1] In milligrams per liter, unless otherwise noted.
[2] Effective date - July 30, 1992.
[3] MCL for arsenic currently under review.
[4] Million fibers per liter, with fiber length > 10 microns.
[5] Effective date - January 1, 1993.

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Contaminants	Health Effects	MCL[1]	Sources
Chromium[2] (Current MCL = 0.05)	liver/kidney, skin and digestive system	0.1	natural mineral deposits; metal finishing, textile, tanning and leather industries
Copper[3]	stomach and intestinal distress; Wilson's disease	TT[4]	corrosion of interior household and building pipes
Fluoride	skeletal damage	4	geological; additive to drinking water; toothpaste; foods processed with fluorinated water
Lead[3] (Current MCL = 0.05)	central and peripheral nervous system damage; kidney; highly toxic to infants and pregnant women	TT[4]	corrosion of lead solder and brass faucets and fixtures; corrosion of lead service lines
Mercury	kidney, nervous system	0.002	industrial/chemical manufacturing; fungicide; natural mineral deposits
Nitrate	methemoglobinemia "blue-baby syndrome"	10	fertilizers, feedlots, sewage; naturally in soil, mineral deposits
Nitrite[2]	methemoglobinemia "blue-baby syndrome"	1	unstable, rapidly converted to nitrate; prohibited in working metal fluids
Total (Nitrate and Nitrite)[2]	Not applicable	10	Not applicable

[1] In milligrams per liter, unless otherwise noted.
[2] Effective date - July 30, 1992.
[3] Effective date - December 7, 1992.
[4] Treatment technique requirement in effect.

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Contaminants	Health Effects	MCL[1]	Sources
Selenium	nervous system	0.05	natural mineral deposits; by-product of copper mining/smelting
Radionuclides			
Beta particle and photon activity	cancer	4 mrem/yr[2]	radioactive waste, uranium deposits, nuclear facilities
Gross alpha particle activity	cancer	15 pCi/L[3]	radioactive waste, uranium deposits, geological/natural
Radium 226/228	bone cancer	5 pCi/L[3]	radioactive waste, geological/natural
Microbiological			
Giardia Lamblia	stomach cramps, intestinal distress (Giardiasis)	TT[4]	human and animal fecal mater
Legionella	Legionnaires' disease (pneumonia), Pontiac Fever	TT[4]	water aerosols such as vegetable misters
Total Coliforms	Not necessarily disease-causing themselves, coliforms can be indicators of organisms that can cause gastroenteric infections, dysentery, hepatitis, typhoid fever, cholera, and other. Also, coliforms interfere with disinfection.	See note[5]	human and animal fecal matter

[1] In milligrams per liter, unless otherwise noted.
[2] "Rem" means the unit of dose equivalent from ionizing radiation to the total body of any internal organ or organ system. A "millirem (mrem)" 1/1000 of a rem.
[3] "Picocurie (pCi)" means the quantity of radioactive material producing 2.22 nuclear transformations per minute.
[4] Treatment technique requirement in effect.
[5] For large systems (40 or more routine samples per month) no more than 5.0% of the samples can be positive. For small systems (39 or fewer routine samples per month) no more than one sample can be positive.

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Contaminants	Health Effects	MCL[1]	Sources
Turbidity	interferes with disinfection	0.5 - 1.0 NTU (nephelometric turbidity unit)	erosion, runoff, discharges
Viruses	gastroenteritis (intestinal distress)	TT[2]	human and animal fecal matter
Other substances			
Sodium	possible increase in blood pressure in susceptible individuals	none (20mg/l reporting level)[3]	geological, road salting

[1] In milligrams per liter, unless otherwise noted.
[2] Treatment technique requirement in effect.
[3] Monitoring is required and data is reported to health officials to protect individuals on highly restricted sodium diets.

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